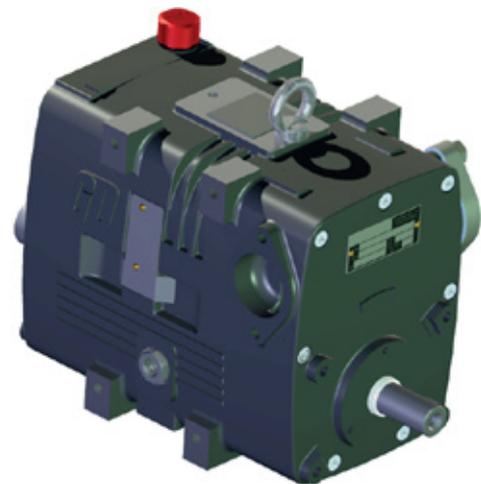


Installation, Operating & Maintenance Manual

(Original Instructions)

DRUM

SC200 CONTACTLESS SCREW COMPRESSOR



4990395005
September 2013

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1

Health & Safety

READ THE WHOLE MANUAL BEFORE COMMENCING INSTALLATION.



Static electricity.

Ensure, that where required, the compressor and ancillaries are earthed in accordance with BS5958 Part 1 1992; 'Control of Undesirable Static Electricity'.

Powder-air combinations are potentially explosive.



Drive line.

It is the responsibility of the installer of the equipment to ensure all rotating and moving parts of the installation are adequately guarded to a standard which complies with the prevailing safety legislation.



Compressor.

The compressor has internal moving parts some of which may be accessed through the inlet and outlet apertures. Do not place any objects especially fingers into these apertures since personal injury could result.



Installation.

A relief valve must be fitted in the outlet pipe work as close to the compressor as possible. The valve must be positioned so as not to vent air onto any personnel since the air discharged will be hot and can cause severe burns.



Storage/Infrequent Usage

Before the machine is installed or when it will not be used for long periods:

- Store in a dry, heated building.
- Handle with care and keep the suction and delivery ports covered.
- Rotate the drive shaft each week, in the direction shown by the arrow on the cover.

Where the compressor is mounted on a vehicle and located outside, it should be operated for at least 15 minutes each week (twice a week in damp/cool conditions)



Fire.

The compressor includes seals made of fluoroelastomer polymers which degrade if exposed to temperatures above 300°C. If the material has been so exposed then it must not be handled with bare hands.

Surface temperatures can exceed 150°C. Highly combustible materials must not come into contact with the discharge pipework or compressor body.



Relief Valve Check

This procedure should be carried out every month to clear the valve seat and check the valve is functional. (Ear protection is recommended)



Noise

Gardner Denver Drum Ltd's own tests show **maximum** noise levels for the installed SC200 running at 1800 rpm should typically not exceed 92 dB(A) at 1 metre.



Belt Drives

The SC200 compressor should not be belt driven.

2 General

2.1 Product General Description

The SC200 is a lightweight, compact, oil free, contactless, low maintenance screw compressor designed for the contaminant free discharge of bulk liquids from general purpose tankers. Typical applications include:

1. Liquid foodstuffs.
2. Solvents.
3. Acids.
4. Alkalis.
5. Hot Bitumen.
6. Resins and other chemicals.

The SC200 comprises of two synchronised screw rotors, a combined main body/step up gearcase assembly and a bearing carrier.

Screw compressors operate on the displacement principle and belong to the group of multiple-shaft displacement machines.

Two parallel non-contacting screw rotors are mounted inside the casing. As the machine rotates, the meshing action of the two helical rotors creates cavities within the machine. During the Inlet stage these cavities increase continuously drawing air into the compressor. When the cavity reaches it's maximum size the compression process begins.

The air is compressed as the cavity reduces along the longitudinal axis and eventually discharged through the air delivery flange and discharge silencer, when fitted, into the connecting pipework.

The compact shape and size of the compressor make it ideal for mounting inside the chassis on most vehicles to enable low cost prop. shaft driving.

A through shaft allows CW or ACW input drive rotation with mounting points on either side of the machine to provide further flexibility.

The standard compressor package consists of the following equipment:

- Basic SC200 machine and mounting kit.
- Inlet filter/kit.
- Relief valve.
- Check valve and flange pack.
- A discharge silencer is available as an optional extra.
- Couplings can be supplied as an optional extra.

NOTE



The shape and size of the compressor make it particularly suitable for PTO/prop. Shaft driving inside the vehicle chassis on most applications.

2.2 Drive Options

The SC200 can be driven using the following drive systems.

Prop. Shaft drive	Direct from a vehicle PTO.
Hydraulic drive	Several drives available depending on application.
Electric motor	Packages on base frames.
Engine drive	Packages on base frames.

General

2.3 Machine Specification Data

The machine nameplate contains the serial number and other important data

	Unit	SC200	
Input Speed ¹⁾	[min ⁻¹]	1,200	1,800
Δ Temperature at Working Gauge Pressure of 2 bar	°C	155	152
Maximum Permitted Intake Temperature	°C	50	50
Working Gauge Pressure	bar	2.0	2.0
Maximum Working Gauge Pressure	bar	2.5	2.5
Intake Flow Rate at Working Gauge Pressure	m ³ /hr		
1.0 bar		102	164
2.0 bar		95	158
2.5 bar		86	153
Coupling Power at Working Gauge Pressure	kW		
2.0 bar		6.5	10.0
2.5 bar		7.5	11.5
Mass Moment of Inertia at the Drive Shaft	kgm ²	0.14	0.14
Typical Noise Level at 1m Distance when Installed on Vehicle	dB(A)	87.0	92.0
Weight Without Accessories	kg	43	43

2.4 SC200 Dimensions

See page 22 for dimensions of the SC200

See Page 23 for dimensions of the SC200 complete with discharge silencer.

3 Installation

3.1 General

The screw compressor must only be installed and started by trained personnel. Damage due to improper handling is not covered by the manufacturers warranty.

The machine is delivered completely assembled

Ensure that the drive shaft rotates freely; if not, do not force the shaft, please inform our service department.

When selecting the machine mounting position, the following points should be considered:

- Access to oil fill/level and drain plugs
- Adequate clearance to allow the cooling air to circulate around the machine.
- Allow sufficient space for the installation of the Inlet and discharge lines, including discharge silencer, if fitted.
- The machine should be protected from dust, flying stones and water splashes.
- Install away from sources of heat, e.g. vehicle exhaust or hot pipes that could effect the compressor temperature in any way.
- Venting relief/control valve air must be unobstructed and direct to the atmosphere.
- Fit the relief and/or protection control valves as close as possible to the SC200 discharge port.
- Venting valves must be positioned so that hot air cannot vent onto the operator or the compressor
- Silencers should be fitted to the discharge port.
- Machine should be easily accessible for maintenance.

For the recommended layout of the machine and ancillaries see Pages 24 & 25.

3.2 Lifting (see fig. 1)

- Avoid any use of force and load/unload the packages with care.
- The weight of the basic compressor without ancillaries is 42.5 kg.
- Remove all transport guards.
- Lift the machine using only the securely mounted ring eye bolt provided. (See Fig. 1/1).
- When the machine has been installed, the supplied lifting eye bolt should be removed and the cover holes fitted with blanking grommets.
- Any equipment used for lifting should be rated accordingly.

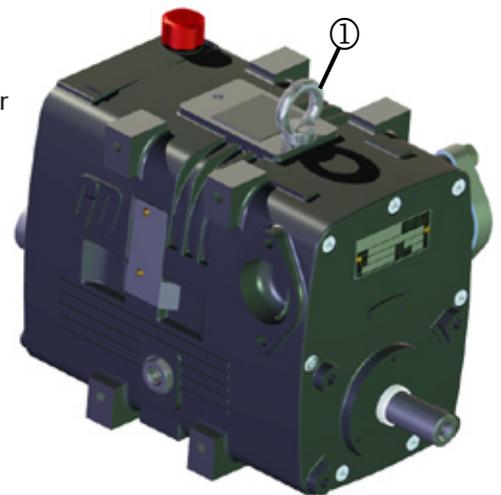


Figure 1. Lifting Eye Bolt

CAUTION



Do not lift using other parts of the machine.

Installation

3.3 Mounting (see fig.s 2a & 2b)

CAUTION



Damage to the machine

When installing the machine, ensure that it is level and not rotated around the 'X' or 'Y' axis.

- The compressor must be mounted with the discharge port up (in the 'Z' direction as shown in Fig 2a).
- The drive shaft should be horizontal. (Engine or Hydraulic drive).
- The permitted deviation from the horizontal line should not exceed $\pm 10^\circ$. (Prop. shaft drive).
- The machine is secured at all four points on one of three sides using four screws (see Fig. 2a/1).
- The mounting face to which the basic machine is fitted should be flat to avoid distortion/stress.
- The mounting bolts/locking nuts should be:

Fastening Screws

Size	M10
Strength Class	8.8
Tightening Torque	45 Nm
Installation Depth	15mm - 18mm
Surface Protection	Recommended

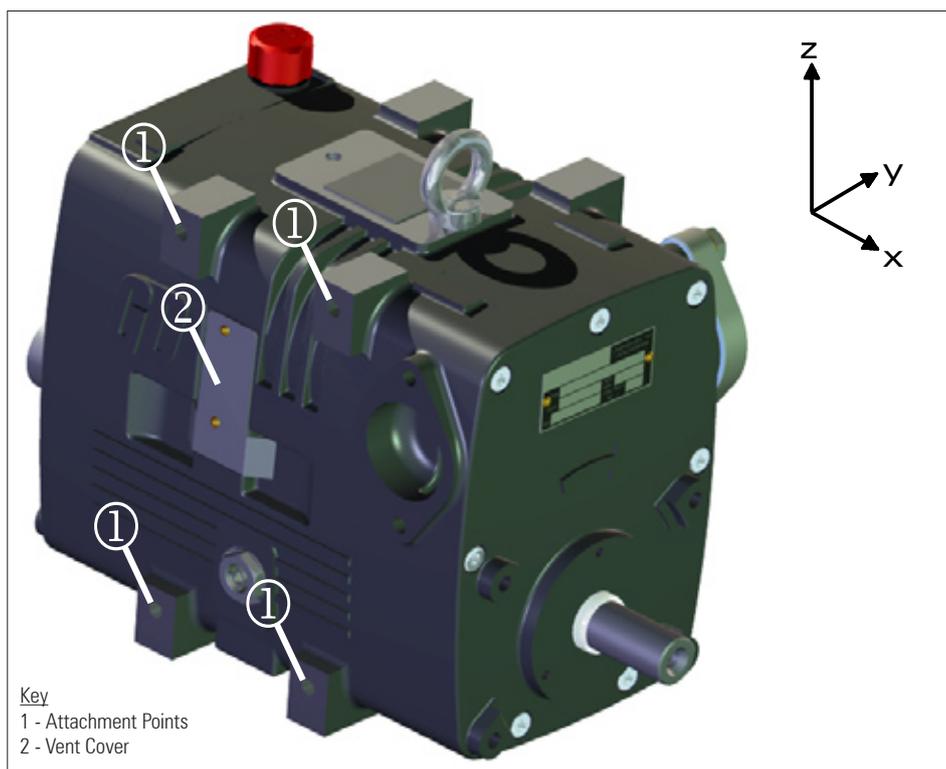


Figure 2a. Attachment Points

Installation

3.3 Mounting (Cont..)

CAUTION



Damage to the machine
When installing the machine, ensure that it is level and not rotated around the 'X' or 'Y' axis.

NOTE



For weights and dimensions see Section 2.3, Page 5, "Machine Specification Data".

- The machine should be mounted to the truck frame using mounting channels (Fig. 2b/1). Alternatively a specially made bracket can be manufactured to support the compressor.
- The machine has three sets of mounting holes (Fig. 2a/1) located on the right, left or bottom of the casing and these are provided to maximise the mounting options available to the installer.
- Spacers may be required if the machine is fitted with a discharge silencer. See page 23 for dimensions of an SC200 with silencer fitted.
- If a mounting bracket is used, this must be suitable to support the weight of the compressor and operating loads.
- The fastening points should be in one plane (Fig. 2b/1).

NOTE



It may be necessary to use alternative mounting channels due to other vehicle ancillaries (e.g. fuel tank). These channels should be of a comparable strength to the configuration shown.

NOTE



The taper washers should be replaced by flat washers if mounting channels with parallel flanges are to be used.

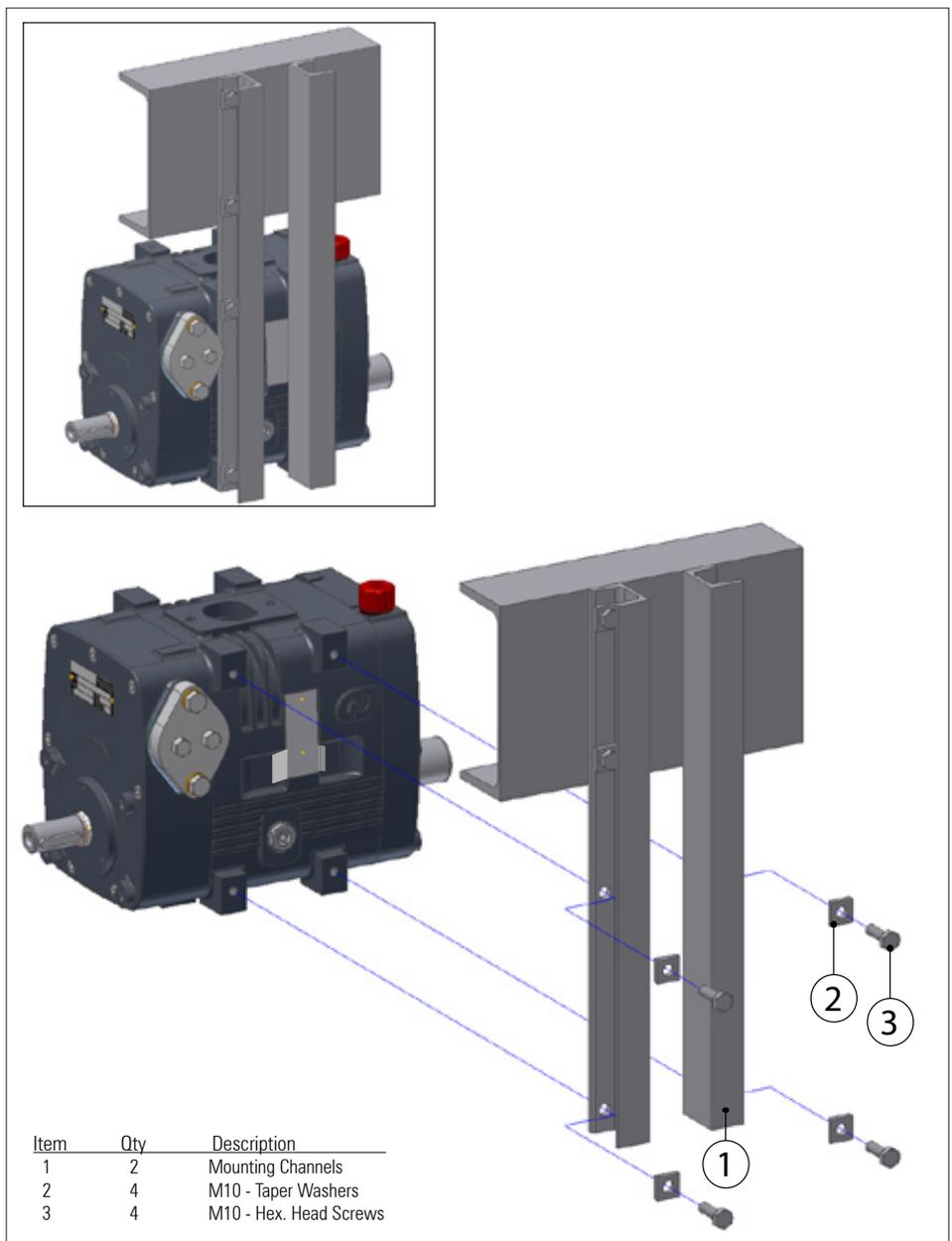


Figure 2b. Mounting Details

Installation

NOTE



All lines must be sufficiently large. If inlet pipes of the wrong diameter are used, it may invalidate the warranty.

NOTE



The minimum ID of the discharge line is 50mm

CAUTION



Damage to the Machine

NOTE



Install Inlet Filter

NOTE



Important for Installation:

Flow direction, space for changing the filter insert, no leaks in the inlet line of the machine.

3.4 Pipework

3.4.1 Discharge Line

- Consider the weight and thermal expansion of the discharge pipe. Connect the downstream discharge piping to the flange of the discharge silencer without stressing it.
- A condensate trap should be installed at the lowest point of the pipeline.
- Pipework that is corrosion-resistant inside is recommended.
- Pipework should be attached to the vehicle chassis using flexible mountings to prevent unnecessary vibration and noise transfer.
- A flexible element is recommended in the discharge pipework to prevent distortion of the machine from the fabricated pipework through chassis movement and heat expansion.

3.4.3 Inlet Line

- An inlet kit is supplied with the SC200 compressor assembly.
- A flexible inlet pipe is provided as part of the inlet kit, which is shown in more detail on pages 24 & 25.
- To maintain the integrity of the compressor air supply, the inlet kit must be used on all SC200 installations.

Non compliance could result in machine failure.

3.4.4 Inlet Air Filter

- A dry air filter with cyclone separator is provided. This filter is especially suitable for Inlet air with a heavy dust load.
- The Inlet air filter should be supported separately and fastened using the mounting bands provided (Fig. 3d).
- Install the Inlet air filter in a horizontal position (Fig. 3c or 3d). The dust discharge valve of the Inlet air filter should point down (Fig. 3c & Fig 3d).
- The Inlet air filter should be located away from likely sources of dust, flying stones, water splashes, waste heat and the diesel engine exhausts (Fig 3a and Fig 3b).

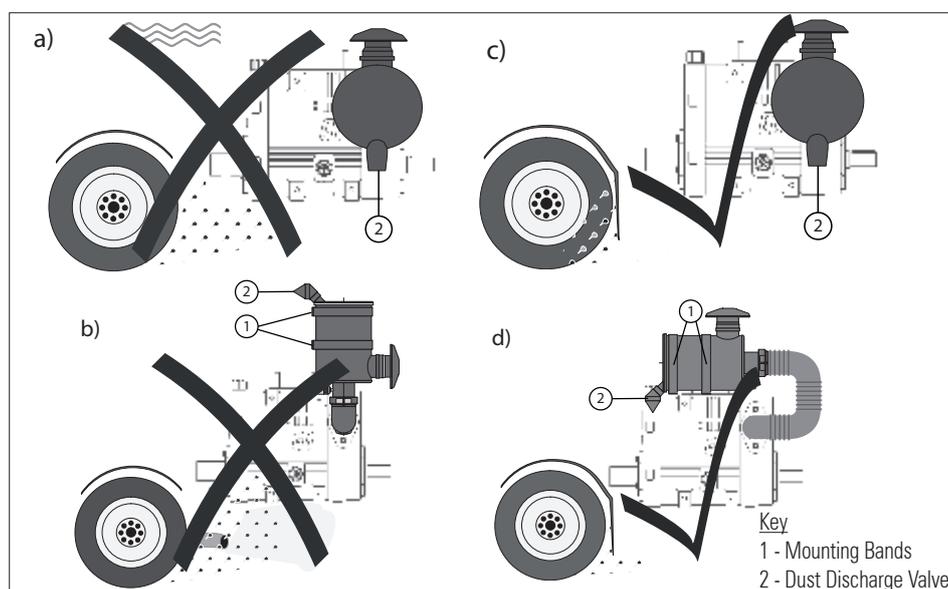


Figure 3. Installation of the Inlet Air Filter

Installation

NOTE



Failure to follow the safety instructions will invalidate the warranty

3.5 Ancillaries

The safe operation of the machine, i.e., operation without safety risk, requires the following safety and monitoring devices:

Inlet Side

- Inlet air filter with maintenance indicator

Discharge Side

- Non-return valve
- Pressure gauge
- Pressure relief valve

Guards

- Protects from rotating parts and risk of burns

Protection of the Machine

- Speed monitor

3.5.1 Inlet Air Filter

For function and installation, see section 3.4.4, page 9.

Maintenance Indicator of the Inlet Air Filter

The visual maintenance indicator on the Inlet air filter of the compressor (Fig. 4/1) indicates the state of the filter element in the Inlet air filter. The maintenance indicator should be easy to see after installation.

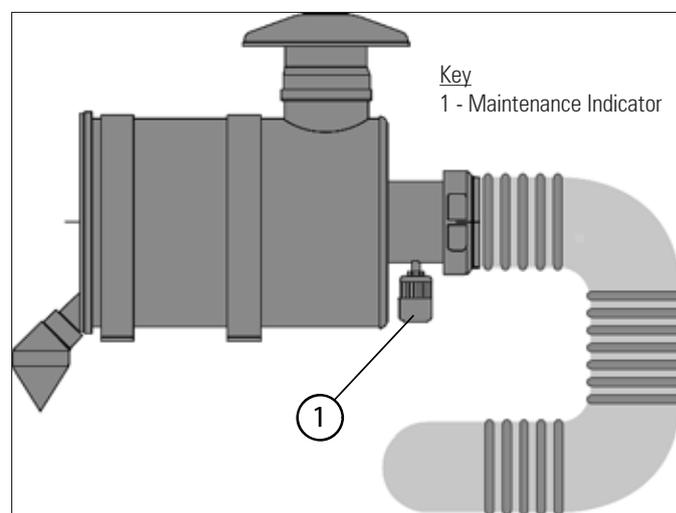


Figure 4. Maintenance Indicator on the Inlet Air Filter

NOTE



The Pressure gauge should have a range of 0 to 2.5 Barg

3.5.2 Pressure Gauge

- It is recommended that a pressure gauge be fitted directly after the discharge port of the machine to provide constant information on the compressed air pressure.

Installation

NOTE



Damage caused by incorrect adjustment is not covered under warranty.

NOTE



3.5.3 Pressure relief Valve

- The relief valve is installed to prevent the SC200 from encountering pressures beyond its operating range.
- The relief valve should be installed as close as possible to the discharge port of the machine either in the reactive silencer (see page 25) or prior to any other discharge ancillary (See page 24).
- The relief valve is preset, wired and leaded (tamper proof) and fitted to protect the SC200 (rather than the system which should be protected by the vehicle tank relief valve) against pressures of over 2.5 barg. Adjustment of the machine relief valve will invalidate the warranty of the SC200 and the relief valve.

The relief valve required to protect the machine is a custom component set to Gardner Denver specifications. This valve is only available from Gardner Denver and use of any other valve may invalidate warranty.

When mounting the pressure relief valve observe the following:

- Mount the valve as shown on pages 24 and 25.
- Make sure that the component markings and the safety seal are present.
- The valve must not be blocked.
- Do not use the pressure relief valve to regulate the compressed air delivery.

CAUTION



Damage to the Flange at the outlet of the discharge silencer

3.5.4 Noise Control

Discharge Silencer (Reactive)

- The discharge Silencer reduces the high-frequency vibrations/noise in the discharge line system.
- Ensure that the piping installation does not stress the flange.

WARNING



Risk from Moving Machine Parts

3.5.5 Guard

- The machine, drive and all hot discharge lines must be fitted with guards or suitable warning labels. The design of the machine must make it impossible to touch any rotating or reciprocating parts of the machine.

3.6 Cooling

- The housing of the SC200 screw compressor is cooled by the ambient air.

Installation

CAUTION



Damage to the Machine

NOTE



For Permitted Speeds See Section 2.3, Page 5.

3.7 Drive

- The rotor shaft should not be exposed to the axial thrust of the drive.
- Do not fit drive components onto the rotorshaft with a hammer.
- If the compressor is powered by a combustion engine, the engine must have speed control which ensures that the compressor cannot run at higher than the permitted maximum speed if the load drops.
- Install a coupling guard complying with safety instructions.
- Please note the step-up or step-down ratio of the transmission (truck p.t.o., large gear assembly, small gear assembly, etc.).
- It is recommended that speed control at the machine is provided with indication at the place of operation.
- Check the speed after setting up the compressor and fix up a notice for the truck driver.

3.7.1 Drive by Hydraulic Motor

- The compressor side half coupling is supplied loose.
- Suitable coupling flanges can be supplied on request.

3.7.2 PTO and Prop. Shaft Drive Alignment

Shaft Cover

- The compressor can be driven from either end of the input shaft (see section 3.3 for possible mounting arrangements).
- The clockwise end of the compressor input shaft is protected with a shaft cover. If this shaft is required, remove the cover and refit it over the unused shaft at the opposite end of the machine.

Drive couplings

- Before fitting the drive coupling, ensure the machine shaft and drive coupling are clean and damage free to help ensure the flange fits correctly.
- Both the shaft and the coupling bore should be smeared with a light oil to aid future separation.
- A Hollow Set Screw (Grub Screw) should be used for retaining the drive flange in position on the shaft.
- Apply Loctite 270 to the Grub Screw and tighten to a torque of 7Nm.
- Flange/coupling removal should only be undertaken with the aid of a puller type device with a screw in the shaft end (see Fig. 5a) to avoid damaging the flange or shaft end.

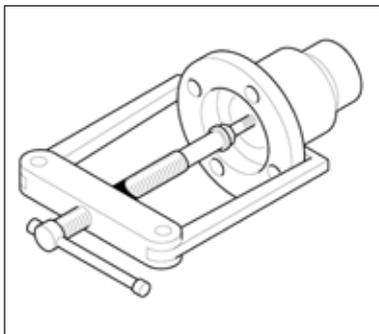


Figure 5a. Drive Flange Removal

Installation

3.7 Drive (Cont..)

3.7.2 PTO and Prop. Shaft Drive Alignment (Cont..)

Alignment (See Fig. 5b)

- The axis of the majority of PTO's are mounted at approximately 2° - 5° to the horizontal, which reflects the angle of the engine and gearbox.
- The compressor should be mounted so that its drive axis is parallel to the PTO's drive axis.
- The compressor should also be mounted so that the prop. shaft angle between the PTO and SC200 **in any plane** is less than or equal to 12° .
- Consideration should be given to the prop. shaft length when mounting the machine.
- The prop. shaft should be sized so that it always has sliding clearance.
- In addition it is also important to ensure the propshaft is not installed fully extended.

NOTE

The compound prop. shaft angle must also be less than 12°

NOTE

Also check the prop. shaft manufacturers information

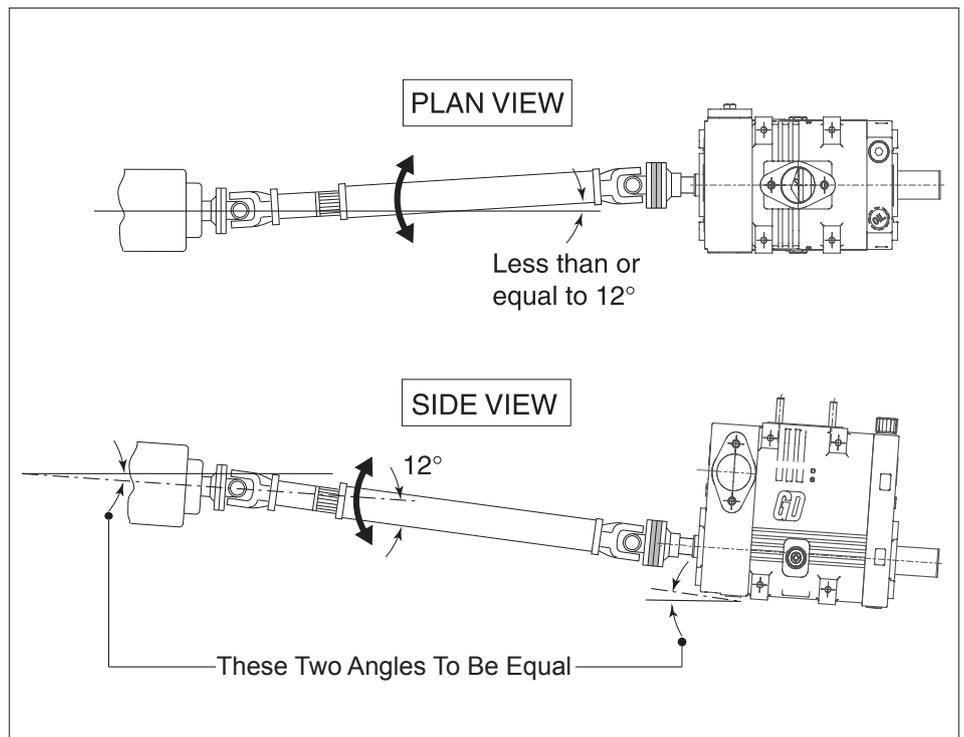
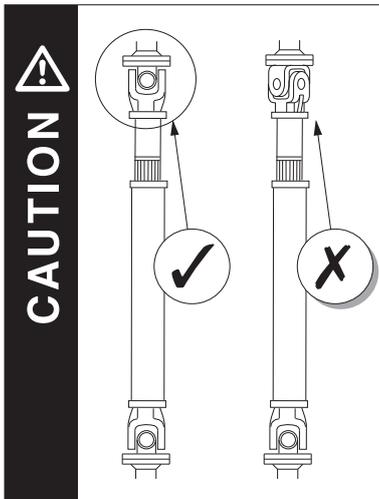


Figure 5b. Drive Alignment

4

Operation & Commissioning

4.1 Start-Up

NOTE



Do not skip any steps. Proceed slowly and with care. Any damage caused by incorrect start-up will not be covered by the warranty.

NOTE



For oil filling instructions and recommended lubricants, see section 5.4, Page 18.

NOTE



The shaft cap should be fitted to the non-drive end of the compressor.

WARNING



Risk of burns due to hot compressed air

CAUTION



Damage to the Machine

CAUTION



Damage to the Machine

4.1.1 Checking The System

The first start-up and also the start-up of the compressor after an extended period of shutdown (over 4 weeks) is critical to the optimal function of the compressor.

Prior to Start-up proceed as follows:

- Inspect the compressor for any damage and ensure all flanges, fasteners and mountings are secure.
- Ensure the machine, drive and all hot discharge lines are fitted with guards or suitable warning labels.
- Ensure all operators have read and understood the operating procedures.
- The machine shaft should not lock when turned.
- All pipework bores should be clean and free of debris.
- If the compressor is prop. shaft driven, ensure the vehicle PTO is disengaged and the engine management system is setup correctly for the application
- All ancillaries are correctly fitted and sequenced.
- Blow (ball) valve open (if starting against a tank pressure).
- Commissioning gate valve and silencer fitted.

4.1.2 Oil Fill

- Check Lubrication plugs are fitted.
- Fill the machine with sufficient oil, as specified in the lubricating recommendation of the compressor.

4.1.3 Checking The Direction Of Rotation

- The machine should rotate in the direction of the arrow on the casing. The compressor has a drive shaft on either end ensuring a machine that can run either clockwise or anti-clockwise is always available.
- Ensure the drive is engaged **gently** when starting.
- Briefly turn on the drive to ensure the correct rotation.

4.1.4 Shut-Off And Other Valves

- Inspect the non-return valve mounted in the discharge line for correct direction (arrow on valve housing).
- Open all manual shutoff and other valves. The shutoff valves in the discharge line should not be closed. Closed valves can cause the compressor to fail.
- Check the function of the relief valve by operating the manual venting function while the compressor is running.
- Do not use the compressor as vacuum pump.
- Use suitable protective equipment.

4.1.5 Turn On, Check Speed & Compression Discharge Pressure

- Turn on the drive and observe the pressure build up in the compressor.

Speed

- For the permitted operating speed range see section 2.3, page 5.

4 Operation & Commissioning

4.1 Start-Up (Cont..)

Discharge Pressure

- For the operating pressure range see section 2.3, page 5.
- Check to ensure the relief valve opens at 2.5barg \pm 10% gauge pressure and blows off any excess pressure.
- Improper setup or installation of the compressor, or manipulation of the relief valve can cause a pressure and temperature rise with risk of machine failure.

4.2 Operation

- The compressor should be started in line with Section 4.1, Page 14.

4.2.1 Inspection During Operation

- The compressor should be inspected regularly during operation.
- Check the working gauge pressure regularly as described in Section 2.3, Page 5.
- Check the operating speed regularly as described in Section 2.3, Page 5.
- Control of the intake temperature is optional.

4.2.2 Relief Valve Inspection

- The setting of the relief valve must be protected against unauthorized and/or accidental change.
- The relief valve must not be blocked or tampered with.
- Check the function of the relief valve by operating the manual venting function while the compressor is running once every week.
- Always use suitable personal protection equipment.
- The valve must be set to the maximum permitted operating pressure (see section 2.3, page 5).

- The relief valve should never be used for controlling pressure.

4.2.3 Maintenance Indicator

- See Section 3.5.1, Page 10, & Section 5.5, Page 19 for details of the maintenance indicator.

4.2.4 Air Filter Element

- See Section 5.5, Page 19, for instructions on changing the filter element.

4.2.5 Maximum Incline During Operation

- The maximum permitted inclined position along the compressor longitudinal and transversal axes should not exceed 10° from the horizontal line. Observe the truck position.
- Inclining the compressor position more than 10° will damage the machine.

4.2.6 Oil Level inspection

- Check the oil level in the compressor at the sight glass every week.

NOTE



Damage caused by incorrect start-up is not covered under warranty.

WARNING



Damage To Safety Equipment

WARNING



Risk of Burns Due To Hot Compressed Air

CAUTION



Damage To The relief Valve

CAUTION



Damage To The Machine

Operation & Commissioning

4.3 Inspection Intervals

	Value	Every 10-20 Min When Running	After Every Use	Daily	Weekly	See Section
Operating Speed	1,200 to 1,800 min ⁻¹	X				2.3
Working Gauge Pressure	2.0 Bar	X				2.3
Check Safety Valve					X	4.2.2
Inspect/Clean Machine					X	5.3
Oil Level					X	4.2.6
Air Filter Maintenance Indicator					X	5.5

Note: Condensed water can accumulate in discharge pipework and should be removed regularly.

CAUTION



Damage to the Machine

CAUTION



Damage to the Machine

4.4 Extended Shutdown

- The compressor should be cleaned thoroughly if it is to be shut down for an extended period of time
- If high pressure water jets are used, water can enter the compressor and cause extensive damage leading to compressor failure.
- Run the machine warm for several minutes after wet cleaning to avoid corrosion due to moisture.
- If the compressor is truck mounted and is used infrequently, we recommend running the compressor for at least 15 minutes once every week to maintain the compressor and pipework in good condition.

5 Maintenance

5.1 Warranty

- Damage caused by non-compliance with these operating instructions are not covered by the warranty.
- Compressor repairs should be carried out by an authorized repair centre using original parts; otherwise the warranty will be invalid.

CAUTION



Observe Safety Instructions in Section 1, Page 3 for all maintenance & Inspection work

5.2 Maintenance Schedule

- The compressor must be maintained by trained personnel.
- The machine must not be running and the pressure in all lines must be relieved.
- Failure or interruption of operation due to poor or improper maintenance can result in very high repair costs and increased machine downtime. Regular authorized maintenance is therefore a 'must'.
- The maintenance intervals in the table below refer to intermittent operation. As service conditions vary, exact time intervals for maintenance, preventive repair and inspections cannot be specified. The table is only for guidance.

NOTE



Install all guards properly at the end of any work

Maintenance locations	Activity	See Chapter	Maintenance Intervals			
			Weekly	Monthly	Quarterly	Yearly
Compressor	Clean	2.3	X			
Air Filter	Inspect/Change	2.3	X			
Safety Valve	Inspect/Actuate	4.2.2	X			
Non-Return Valve	Check	5.3			X	
Oil Level	Inspect/Add Oil	4.2.6	X			
Oil Change	Change	5.5				X or 500 h

5.3 Cleaning

CAUTION



Damage to the Machine

- If high pressures jets are used when cleaning, water can enter the compressor and cause extensive damage leading to machine failure.

NOTE



The Compressor should be cleaned every week

- Run the machine warm for several minutes after wet cleaning to avoid corrosion due to moisture.

Maintenance

NOTE



Dispose of all oil, grease, cleaner or components such as filter elements, as prescribed by the local environmental laws.

5.4 Oil Change

- Change the oil regularly after the specified interval.
- Lubricant to be Mobil Delvac MX 15/W40 or better oil which must meet or exceed the specification API CI-4 as a minimum.
Temp. Range: -10°C to +35°C.
Volume: 1.2 Litres approx.
- Remove the oil drain plugs. (Fig. 6/1).
- Collect the spent oil in a suitable container.
- Install the oil drain plugs.
- Remove the oil filling plug (Fig. 6/2) and fill with approx. 1.2 litres of new oil.
- Stop filling when the level reaches the top edge of the oil sight glass (Fig. 6/3).

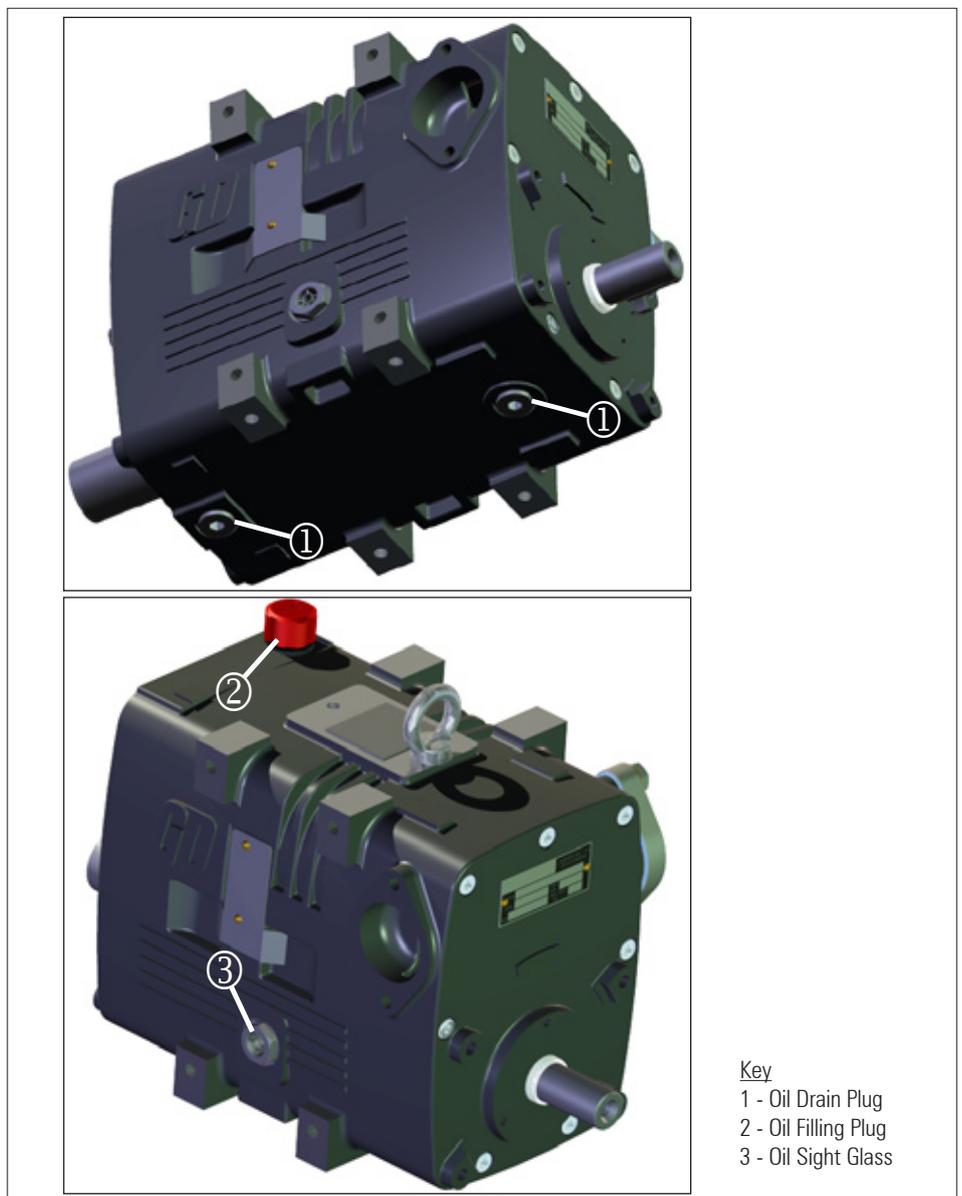


Figure 6. Oil Change

Maintenance

NOTE

The filter element should be changed when the maintenance indicator shows red (Fig. 7a/1).

NOTE

Stop the machine before cleaning or replacing the filter elements

NOTE

Make a weekly check of the vacuator valve by compressing the valve to note any dust collection.

5.5 Inlet Air Filter

The maintenance indicator indicates the state of the filter element in the Inlet air filter. The filter element should be replaced/cleaned when the Maintenance indicator enters the red portion of the blockage scale (Fig. 7a/1)

If the indicator valve has entered the red portion of the scale:

- Press the reset button and re-check with the compressor operating.
- If the blockage indicator still returns to red, the filter must be either cleaned or replaced.

Cleaning the Casing

- Unclip the clamp retaining the end cover (Fig. 7b/1) of the air filter and remove it noting the position of the vacuator valve (Fig. 7b/5).
- Empty out any dust or dirt and then re-fit in the original position (vacuator valve downwards).

Cleaning/Replacing the Element

- Remove the end cover by releasing the retaining clips and withdraw the filter (Fig. 7b/1).
- Clean the filter by blowing compressed air through the filter from the inside outwards or replace with a new filter element (Fig. 7b/2).
- Clean the inside of the filter body and end cover by blowing with compressed air.
- Replacement of the element/end cover is a direct reversal of the above.
- After cleaning the filter, push the hook-shaped pressure switch of the maintenance indicator inward (the colour changes from red to colourless)
- The maintenance indicator is again ready for service (Fig. 7a/2).

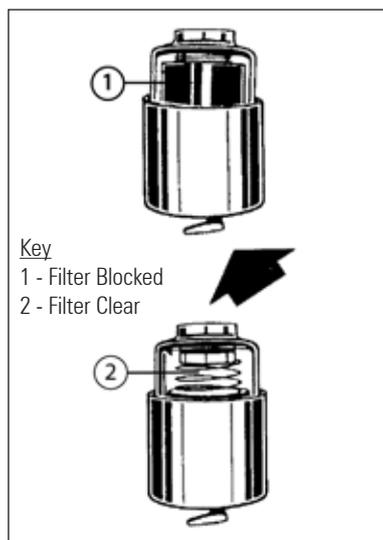


Figure 7a. Maintenance Indicator

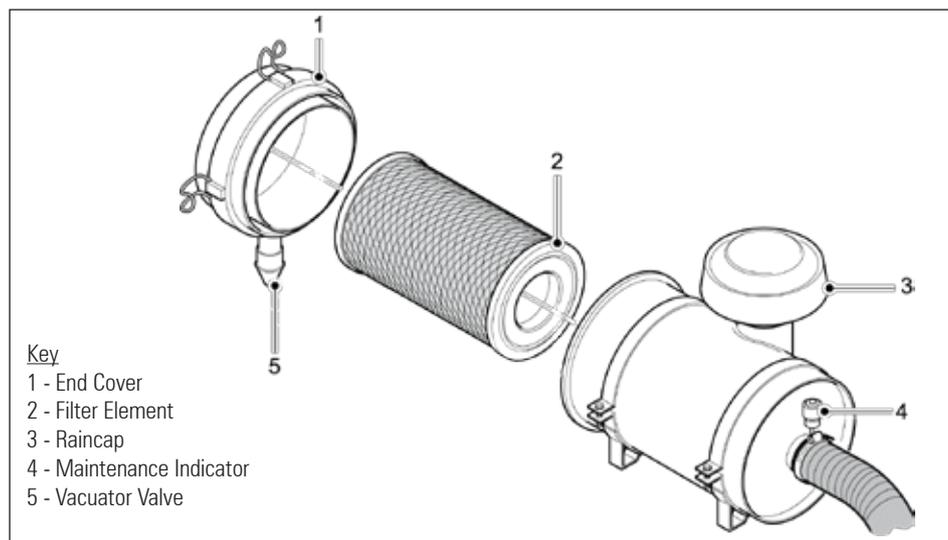


Figure 7b. Inlet Air Filter

Maintenance

CAUTION



Failure due to operating error is not covered by the warranty

5.6 Troubleshooting

5.6.1 Possible Operating Errors

Operating errors can cause failure of the machine. Conditions to avoid are:

- Speed lower or higher than the permitted limit.
- Very quick start-up.
- Too high discharge pressure (gauge pressure)
- Start-up against pressurized system.
- Blow-off of air flow by the pressure relief valve when the discharge line is closed.
- Excessive discharge temperature.
- Soiled Inlet air filter.
- Blocked silencer.
- Blocked pipe.
- Intake of liquid.

5.6.2 Remedial Action

- If a problem occurs, refer to the table below for possible causes and remedies.
- If a problem occurs which is not described in the table, contact our customer service personnel.
- If a problem persists, please contact our customer service personnel.

Possible Cause	Remedy
Poor Output	
✗ Air Inlet Filter Blocked	✓ Clean intake air filter, replace cartridge if necessary
✗ Input Speed Too Low	✓ Keep within permitted speed range
Abnormal Sound	
✗ Compressor tilt too large	✓ Keep within max. tilt of 10°
✗ Bearing defective	✓ Inform customer service
✗ Wrong speed	✓ Keep within permitted speed range
✗ Pressure fluctuations	✓ Keep within permitted working gauge pressure
✗ Air Leak on Discharge line	✓ Locate Leak and Fix
Compressor Does Not Deliver Operating Gauge Pressure	
✗ Incorrect Pressure gauge reading	✓ Replace pressure gauge
✗ System leak	✓ Repair leak
Compressed Air Temperature Too High	
✗ Discharge pressure too high	✓ Keep within permitted working gauge pressure
✗ Line blocked	✓ Remove blockage
✗ Intake air filter blocked	✓ Clean intake air filter
✗ Input Speed Too low	✓ Keep within permitted speed range
Power Consumption Too High	
✗ High speed	✓ Keep within permitted speed range
✗ High discharge pressure	✓ Keep within maximum permitted operating pressure
✗ Pressure gauge showing wrong reading	✓ Replace pressure gauge
Safety Valve Blows Off Air	
✗ Shutoff valve in discharge line is closed	✓ Open the shutoff valve.
✗ Discharge pipework is blocked	✓ Unblock Discharge Pipework

Maintenance

NOTE



Dispose of all oil, grease, cleaner or components such as filter elements, as prescribed by the local environmental laws.

5.7 Final Shutdown and Disposal

- Remove the compressor in reverse order of installation (section 3).
- Open oil drain plug and collect oil in a suitable container (Section 5.4).
- Close the oil drain plug and dispose of the compressor as prescribed by local environmental laws.

5.8 Available Accessories

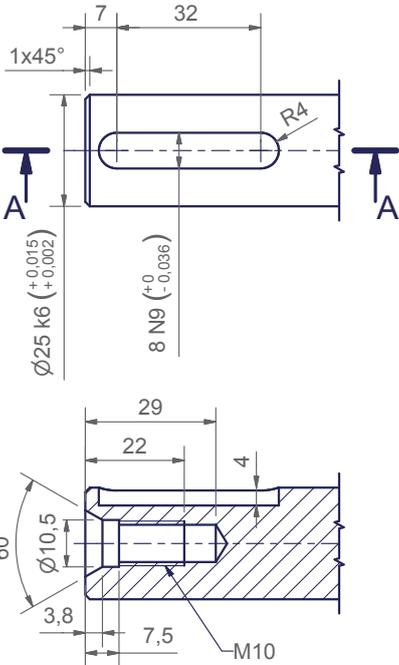
- Inlet Air Filter with flexible connecting hose and flange (see section 5.9.3, Page 24 and section 5.9.4, Page 25 for assembly instructions).
- Discharge Silencer.
- Non-Return Valve.
- Pressure relief Valve.
- Prop. Shaft Mating Flanges.
- Hydraulic Motor Couplings.
- Mounting Flanges for Hydraulic Motors (SAE, ISO, CETOP).
- Pressure Gauge.
- Filter Maintenance Indicator.

5.9 Drawings

- 5.9.1 SC200 Dimensions.
- 5.9.2 SC200 Dimensions with Discharge Silencer.
- 5.9.3 SC200 with Ancillaries and Customer Supplied Pipework.
- 5.9.4 SC200 with Discharge Silencer, Ancillaries and Customer Supplied Pipework.

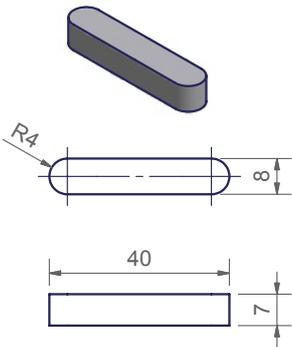
Drawings

5.9.1 SC200 Dimensions

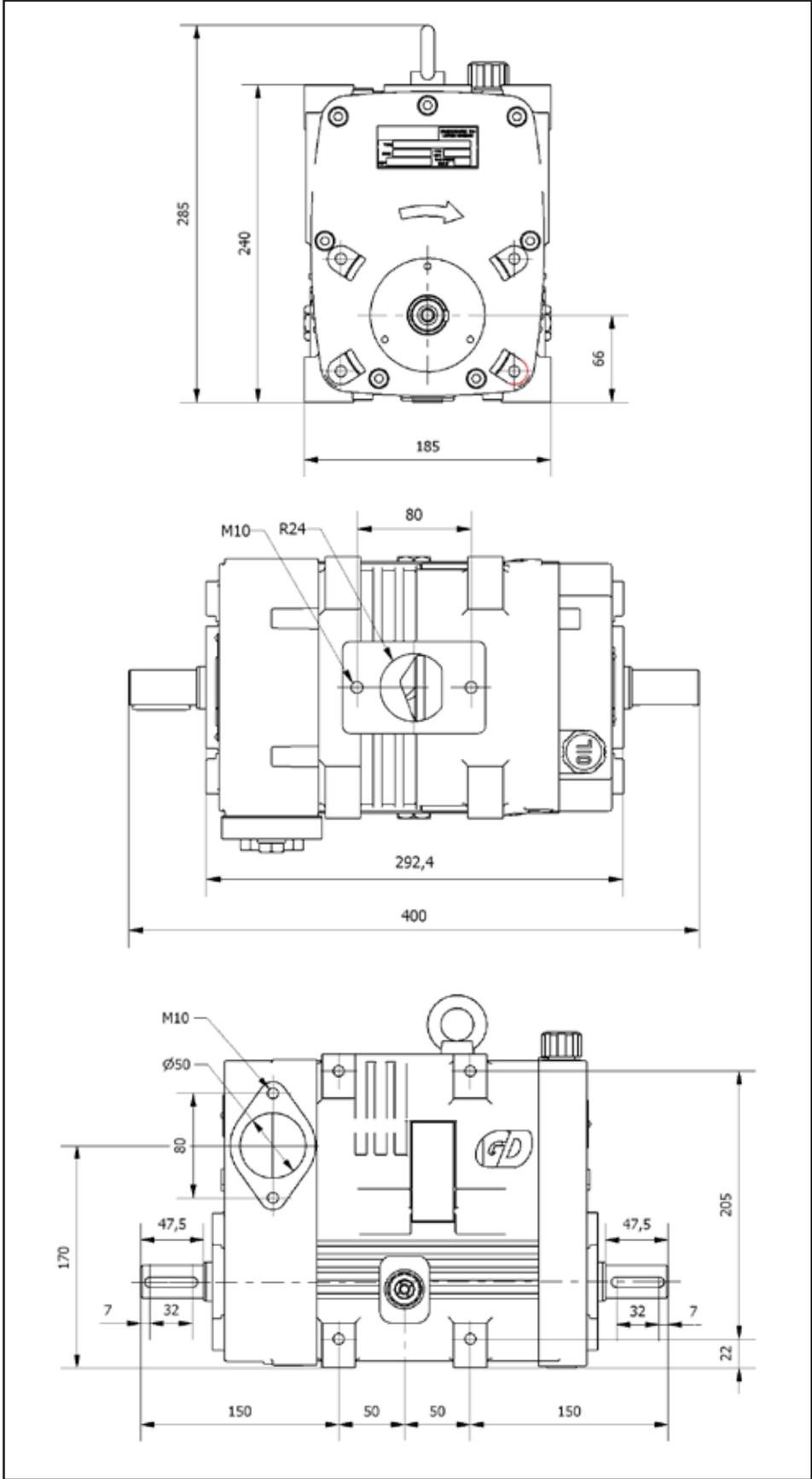


A-A

Input Shaft & Keyway Dimensions



Key Dimensions

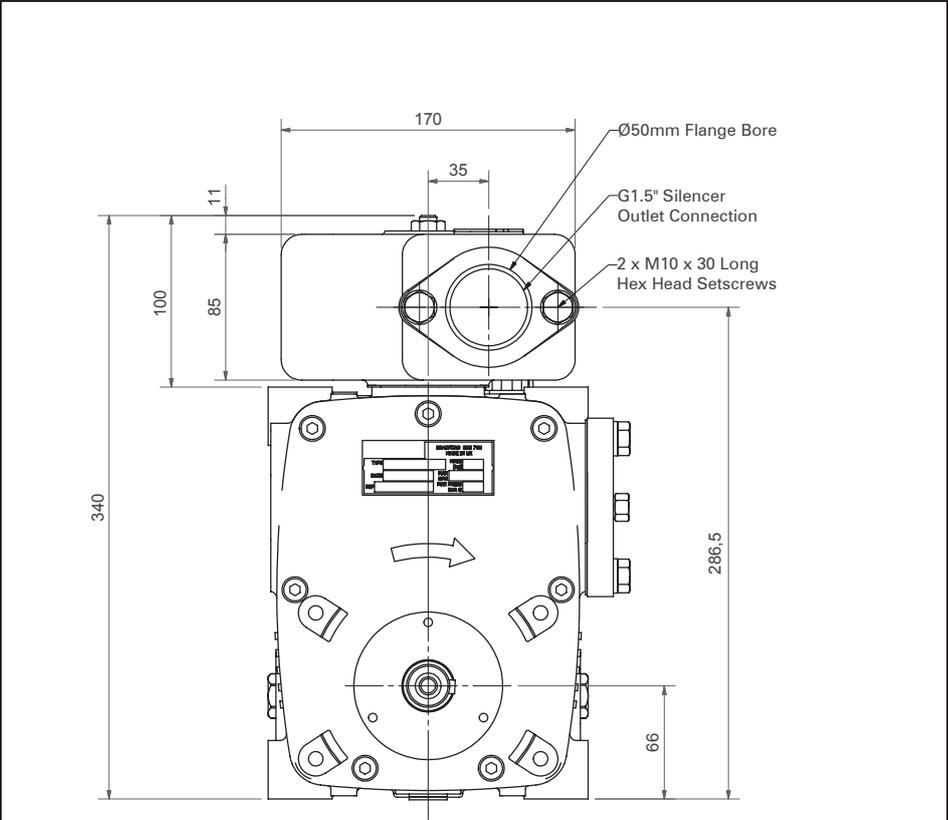


Drawings

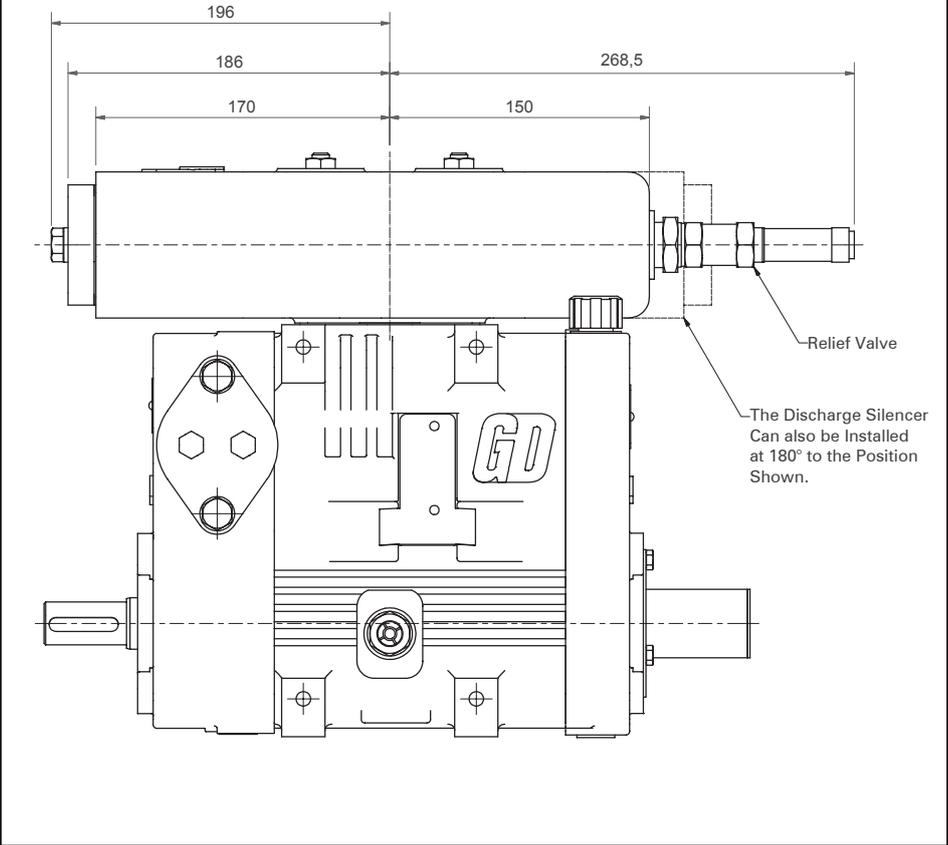
5.9.2 SC200 Dimensions With Discharge Silencer



SC200 & Silencer in Position 1

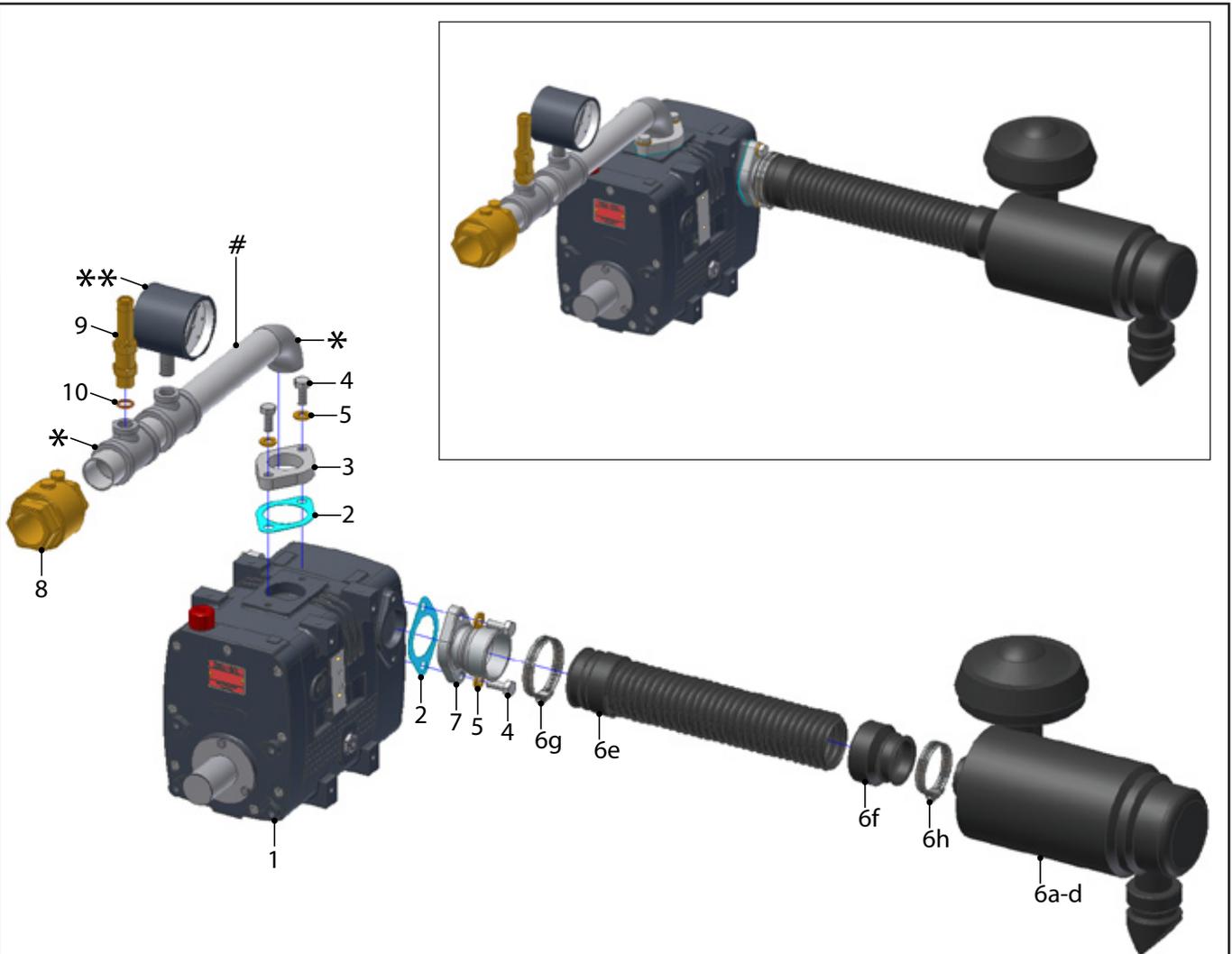


SC200 & Silencer in Alternative Position 2



Drawings

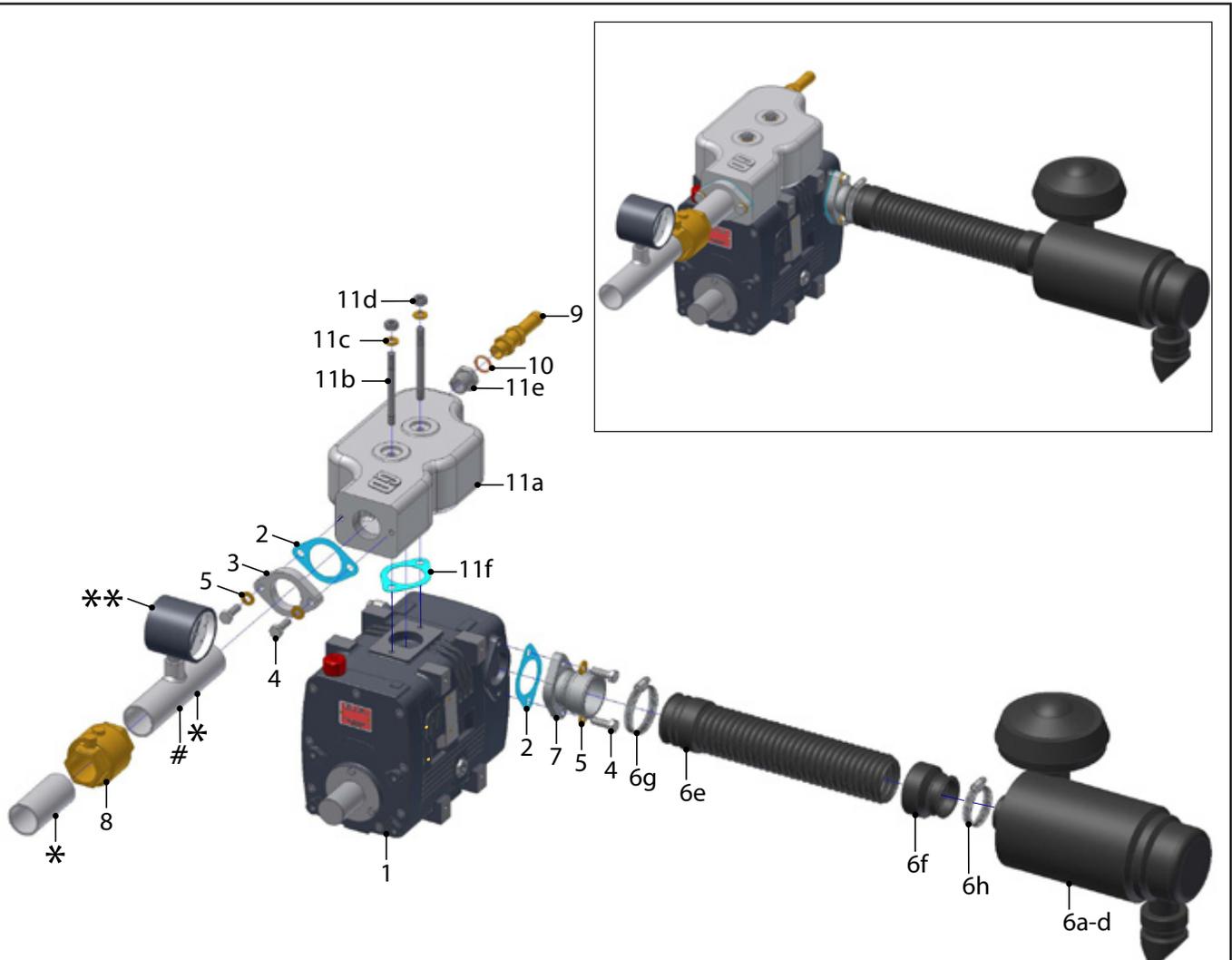
5.9.3 SC200 With Ancillaries & Customer Supplied Pipework



Ref	Qty	Description	Ref	Qty	Description
1	1	SC200 COMPRESSOR	7	1	INLET FLANGE (DN50)
2	2	GASKET, OVAL	8	1	VALVE CHECK 1½" BSP FEMALE 'S'
3	1	FLANGE, OVAL ST.ST.	9	1	VALVE RELIEF ½" 2.5 BAR
4	4	SCREW, SET HEX M10 X 30	10	1	WASHER JOINT ½" BSP
5	4	WASHER, LOCK	*	1	CUSTOMER SUPPLIED PIPEWORK & FITTINGS
6	1	INLET KIT <i>Consisting of:</i>	**	1	CUSTOMER SUPPLIED PRESSURE GAUGE Gauge Range: 0-2.5Barg
	1	INLET FILTER KIT (5") <i>including:</i>	#	1	A flexible element is recommended in the discharge pipework to prevent distortion of the machine from the fabricated pipework through chassis movement and heat expansion.
6a		1 off Raincap			
6b		1 off Mounting Band			
6c		1 off Indicator			
6d		1 off Filter Assembly			
	1	INLET HOSE KIT <i>Including:</i>			
6e		1 off Duct & Moulded Cuff			
6f		1 off Screw on Cuff			
6g		1 off Hose Clip 60/80			
6h		1 off Hose Clamp 50/70			

Drawings

5.9.4 SC200 With Discharge Silencer, Ancillaries & Customer Supplied Pipework



Ref	Qty	Description	Ref	Qty	Description
1	1	SC200 COMPRESSOR	7	1	INLET FLANGE (DN 50)
2	2	GASKET, OVAL	8	1	VALVE CHECK 1½" BSP FEMALE 'S'
3	1	FLANGE, OVAL ST.ST.	9	1	VALVE RELIEF ½" 2.5 BAR
4	4	SCREW, SET HEX M10 X 30	10	1	WASHER JOINT ½" BSP
5	4	WASHER, NORD LOCK (PAIR)	11	1	DISCHARGE SILENCER KIT <i>Consisting of:</i>
6	1	INLET KIT <i>Consisting of:</i>	11a		1 off Discharge Silencer
6a		INLET FILTER KIT (5") <i>including:</i>	11b		2 off Studs, M10 x 100
6b		1 off Raincap	11c		2 off Washers, Nord Lock (Pair)
6c		1 off Mounting Band	11d		2 off Nuts, M10
6d		1 off Indicator	11e		1 off Reducing Bush, 3/4" BSPT (M) x 1/2" BSP (F)
6e		1 off Filter Assembly	11f		1 off Gasket, Oval
6e	1	INLET HOSE KIT <i>Including:</i>	*	1	CUSTOMER SUPPLIED PIPEWORK
6f		1 off Duct & Moulded Cuff	**	1	CUSTOMER SUPPLIED PRESSURE GAUGE
6g		1 off Screw on Cuff			Gauge Range: 0-2.5Barg
6h		1 off Hose Clip 60/80	#	1	A flexible element is recommended in the discharge pipework to prevent distortion of the machine from the fabricated pipework through chassis movement and heat expansion.
6h		1 off Hose Clamp 50/70			

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